Please amend the application as follows:

In the Specification

Please add the following paragraph at page 1, line 5:

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RELATED APPLICATION

This application is a continuation of U.S. Application No. 09/063,311, filed April 20, 1998, now abandoned. The entire teachings of the above application are incorporated herein by reference.

In the Claims

Please cancel Claims 13-42.

Please amend Claims 1 and 3-5.

1. (Amended) A method for reducing non-specific binding of a target molecule to an oligonucleotide array comprising a plurality of oligonucleotides on a surface of a solid support, wherein said surface has a plurality of designated regions and a plurality of protected regions, each of said plurality of protected regions having a protecting group thereon, said method comprising:

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a) producing said plurality of oligonucleotides at each of said designated regions, each of said plurality of oligonucleotides having a terminal protecting group; and

b) replacing with a negatively charged phosphate residue or a polyanion chain of 2 to 21 negatively charged phosphate units, at least one of:

i) the protecting groups on each of said plurality of oligonucleotides produced in step *a)*, and

ii) the protecting groups on each of said plurality of protected regions; whereby non-specific binding of said target molecule is reduced.

3. (Amended) The method according to Claim 1, wherein said step *a)* of producing said plurality of oligonucleotides comprises:

1) attaching to each of said designated regions an independently selected linker monomer having a photolabile protecting group;

2) attaching an independently selected nucleotide monomer having a photolabile protecting group to each of said attached linker monomers using light directed methods to produce a plurality of attached monomers each having a terminal photolabile protecting group;

3) attaching an independently selected nucleotide monomer having a photolabile protecting group to each of said attached monomers using light directed methods to produce a plurality of oligonucleotides each having a terminal photolabile protecting group; and

4) repeating step *3)* from 0 to 119 times, to attach subsequent nucleotide monomers to each of said oligonucleotides produced in step *3)* to produce a plurality of oligonucleotides having a terminal photolabile protecting group.

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4. (Amended) The method according to Claim 1, wherein said step *a)* of producing said plurality of oligonucleotides comprises:

1) attaching to each of said designated regions an independently selected linker monomer having a chemically-removable protecting group;

2) replacing each of said chemically-removable protecting groups on each of said attached linker monomers with a photolabile protecting group;

3) attaching an independently selected nucleotide monomer having a chemically-removable protecting group to each of said attached linker monomers using light-directed methods to produce a plurality of attached monomers each having a terminal chemically-removable protecting group;

4) replacing each of said chemically-removable protecting groups on each of said attached monomers with a photolabile protecting group;

5) attaching an independently selected nucleotide monomer having a chemically-removable protecting group to each of said attached monomers using light-directed methods to produce a plurality of oligonucleotides each having a terminal chemically-removable protecting group;

6) replacing each of said chemically-removable protecting groups on each of said oligonucleotides produced in step *5)* with a photolabile protecting group; and

7) repeating steps *5)* and *6)* from 0 to 119 times, to attach subsequent nucleotide monomers to each of said oligonucleotides produced in step *5)* to produce said plurality of oligonucleotides having a terminal chemically-removable protecting group.

5. (Amended) The method according to Claim 1, wherein said step *a)* of producing said plurality of oligonucleotides comprises:

1) attaching to each of said designated regions an independently selected linker monomer having a chemically-removable protecting group;

2) forming an activation layer on said designated regions and said protected regions, said activation layer comprising:

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i) a photoactive agent, said photoactive agent producing a catalyst when irradiated, and

ii) an autocatalytic agent, said autocatalytic agent generating a product that removes said chemically-removable protecting group when said autocatalytic agent is activated by said catalyst;

3) irradiating a portion of said activation layer overlying said designated regions to remove said chemically-removable protecting group on said linker monomer;

4) attaching an independently selected nucleotide monomer having a chemically-removable protecting group to each of said attached linker monomers, to produce a plurality of attached monomers each having a terminal chemically-removable protecting group;

5) irradiating a portion of said activation layer overlying said designated regions to remove said chemically-removable protecting group on said attached monomers;

6) attaching an independently selected nucleotide monomer having a chemically-removable protecting group to each of said attached monomers, to produce a plurality of oligonucleotides each having a terminal chemically-removable protecting group;

7) irradiating a portion of said activation layer overlying said designated regions to remove said chemically-removable protecting group on said oligonucleotides produced in step *6)*; and